

REMARKS

Applicants thank the Examiner for reissuing the Action of August 7, 2007 Paper No. 20070510, to correct the statutory period for response. The reissued, outstanding Action is Paper No. 20070508 dated August 22, 2007. An Interview Summary dated August 15, 2007 that pertains to reissuance of the August 7th Action is appended to the August 22nd Action. The present Response Including Amendment is in response to the August 22nd Action, Paper No. 20070508, as noted.

Amendment to the Claims

Claim 1 has been amended to incorporate the subject matter of claim 3 and thus delete certain elements that are recited within claim 1 as "optionally" present. Specifically, the following has been deleted from claim 1:

optionally 1 to 100, elements in arbitrary order which are either identical or different from each other selected from the group consisting of formulae

- | | |
|--|-----------|
| -O-Si(CH ₃)[CH(CH ₃) R ³]- | (Va), |
| -O-Si(CH ₃)(CH ₂ -CH ₂ - R ³)- | (Vb), |
| -O-Si(CH ₃)[C(=CH ₂) R ³]- | (Vc), and |
| -O-Si(CH ₃)(CH=CH- R ³)- | (Vd); |

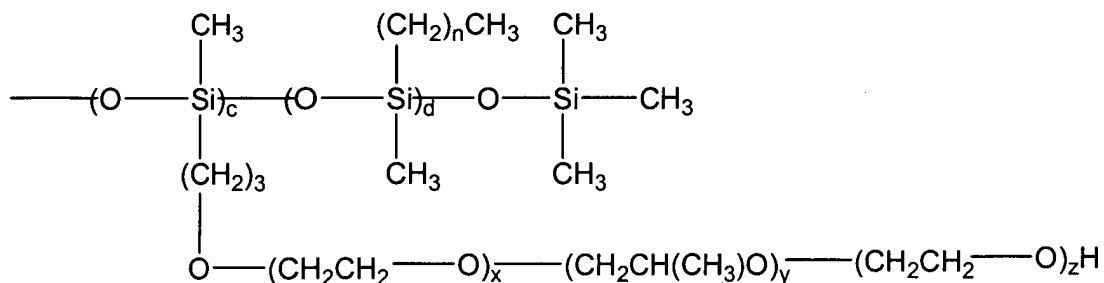
Because all instances of R³ have been deleted, the phrase "R³ is a group which is able to form ionogenic or hydrogen bonds" is also deleted as irrelevant. Support for these amendments is found in original claim 1 in its recitation of the elements as "optionally" present (see cited

It is submitted that no new matter has been introduced by the foregoing amendments. Approval and entry of the amendments is respectfully solicited.

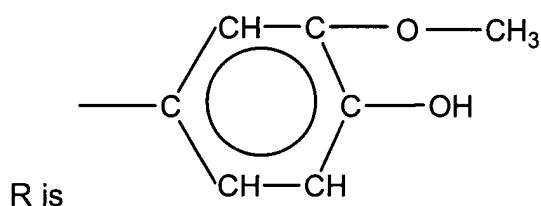
Claims 1-5 have been rejected under 35 USC §102(b) as being anticipated by O'Lenick, U.S. Patent Number 6,346,595 ("O'Lenick"). (Paper number 20070508, at 2).

O'Lenick discloses a genus of "silicone compounds that contain a UV absorber, derived from eugenol, and a polar hydroxyl-containing group referred to herein as a dimethicone copolyol group." (Col. 3, lines 27-31). O'Lenick discloses the genus of formula:





wherein



a is an integer ranging from 0 to 2000;

b is an integer ranging from 1 to 20;

c is an integer ranging from 1 to 20;

d is an integer ranging from 0 to 20;

n is an integer ranging from 10 to 20;

w is an integer ranging 0 to 20;

x is an integer ranging 0 to 20;

y is an integer ranging 0 to 20;

z is an integer ranging 0 to 20.

(O'Lenick, Col. 3, line 51 – Col. 4, line 18).

In rejecting claim 1, the Examiner asserted that O'Lenick discloses that "trimethylsilyl and trimethylsiloxyl endstopped polysiloxanes can be co-

polymerized with UV absorbing, lipophilic, and hydrophilic groups producing novel polymeric sunscreen agents having a general structure shown in the formula (col. 3, lines 55-65)." (Paper No. 20070508 at 2). The Examiner further asserted that "the UV absorber employed [by O'Lenick] is eugenol (col. 4, lines 1-5), a lipophilic constituent consisting of a linear alkyl group between C₁₁ and C₂₁ carbons (col. 4, line 14) [is present], and a hydrophilic moiety of alkoxyated alcohols (col. 4, lines 16-18) [is present]. " (Id.).

Regarding claim 3, the Examiner stated, "O'Lenick teaches a polymer whereby there are no units containing a hydrophilic group, i.e. c=0 (col. 4, lines 54 and 26)." (Id. at 3).

The Examiner's reference to a "lipophilic constituent consisting of a linear alkyl group between C₁₁ and C₂₁ carbons" at col. 4, line 14 of O'Lenick, is to n which is disclosed as being "an integer ranging from 10 to 20". As seen in the formula reproduced above from O'Lenick, the moiety to which the integer n refers is present as a substituent on the d subunit. O'Lenick discloses that d is an optional subunit as it is "an integer ranging from 0 to 20". (O'Lenick Col. 4, line 13). The Examiner has associated subunit d with the "lipophilic constituent...".

Also, the Examiner's reference to a "hydrophilic moiety of alkoxyated alcohols" at col. 4, lines 16-18 of O'Lenick is to x, y, and z, each of which "is an integer ranging from 0 to 20". As seen in the formula reproduced above from O'Lenick, the moieties to which the integers x, y and z refer are optional substituents on the c subunit. O'Lenick discloses that **c is a required**

subunit as c is "an integer ranging from 1 to 20". (Col. 4, line 12). The Examiner has associated subunit c with the "hydrophilic moiety..."

As is well settled, anticipation requires "identity of invention." *Glaverbel Societe Anonyme v. Northlake Mktg. & Supply*, 33 USPQ2d 1496, 1498 (Fed. Cir. 1995). Each and every element recited in a claim must be found in a single prior art reference and arranged as in the claim. *In re Marshall*, 198 USPQ 344, 346 (CCPA 1978); *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir 1984). There must be no difference between what is claimed and what is disclosed in the applied reference. *In re Kalm*, 154 USPQ 10, 12 (CCPA 1967); *Scripps v. Genentech Inc.*, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991).

Initially, we note that claim 1 has been amended to further prosecution. Claim 1 as amended recites "[a] polysiloxane comprising ... structural elements per molecule...". See claim 1 for the recited structural elements. It is noted that elements are recited which include R¹, a UV light absorbing group. Elements are also recited in the claim which include R² which is hydrogen or a lipophilic group. By amendment of claim 1 to incorporate claim 3 as noted above, the elements recited that include R³, a group which is able to form ionogenic or hydrogen bonds, have been deleted.

It is submitted that the amended claims do not have "identity of invention" with O'Lenick. The amended claims do not recite a polysiloxane comprising a group which is able to form ionogenic or hydrogen bonds, whereas O'Lenick discloses a polymer in which the presence of the hydrophilic moiety is

required. In Col. 4, line 11, for example, O'Lenick states that with respect to the disclosed formula, "c is an integer ranging from 1 to 20." For this reason alone, the rejection should be withdrawn.

Furthermore, in a §102(b) rejection there must be no difference between what is claimed and what is disclosed in the applied reference. *In re Kalm*, 154 USPQ 10, 12 (CCPA 1967); *Scripps v. Genentech Inc.*, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991). "Moreover, it is incumbent upon the Examiner to **identify wherein each and every facet** of the claimed invention is disclosed in the applied reference." *Ex parte Levy*, 17 USPQ2d 1461, 1462 (BPAI 1990). The Examiner is required to point to the disclosure in the reference "**by page and line**" upon which the claim allegedly reads. *Chiong v. Roland*, 17 USPQ2d 1541, 1543 (BPAI 1990).

As claim 1, as amended, incorporates now canceled claim 3, Applicants submit that as to original claim 1 as well as amended claim 1, the rejection fails to identify where in O'Lenick each and every element claimed is shown. All that the rejection states as to claim 1 is what is cited above regarding O'Lenick's disclosure of a "UV absorber", a "lipophilic constituent", and a "hydrophilic moiety". All that the rejection states about now deleted claim 3 is that "O'Lenick teaches a polymer whereby there are no units containing a hydrophilic group, i.e. c=0 (col. 4, lines 25 and 26)."

The Examiner's rejection is insufficient as a matter of law to support a conclusion of anticipation, and for this additional reason, the rejection should be withdrawn.

Moreover, there is a "burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under sections 102 and 103. . . ." *In re Warner*, 154 USPQ 173, 177 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968). The rejection fails to provide any basis, let alone the requisite factual basis to sustain a rejection for anticipation. Thus, for this reason also, the rejection should be withdrawn.

Moreover, out of an abundance of caution, for the reasons set forth below, it is respectfully submitted that O'Lenick does support a factual conclusion of anticipation. O'Lenick lacks a group that meets any of presently claimed formulae IIIa, IIIb, IIIc or IIId, each of which includes R1, a UV light absorbing group. O'Lenick's subunit designated with the integer b includes R which is O'Lenick's UV absorbing group derived from eugenol. O'Lenick's R group is shown in the reproduced formula above. As can be seen, R has an aromatic ring that attaches directly to the molecule, i.e., no linker is incorporated within R. Siloxane subunit b has a (CH₂)₃ group between it and R. Each and every element of the present claim is not met by O'Lenick. None of presently claimed formulas IIIa-IIId are met by subunit b of O'Lenick. O'Lenick differs from what appears to be the closest element, present formula IIIb, i.e., -O-Si(CH₃)(CH₂-CH₂-R¹)-, by one CH₂ group. As each and every element presently claimed is not disclosed by O'Lenick, for this reason alone, the anticipation rejection must fall.

In addition, there are differences pertaining to O'Lenick's disclosure of "c=0" from the present claims. O'Lenick's disclosure prefacing and including

the Examiner's cited portion of "when $c=0$ " is that "when polar groups are incorporated, in this case dimethicone copolyol groups (the group covered by the subscript "c") the UV absorption spectra shifts into the UV-B region. Or stated another way, when c is zero, the UV absorption is in the UV-C region." (Col. 4, lines 22-26). The two lines identified by the Examiner which state, "when c is zero, the UV absorption is in the UV-C region" is not part of the overall disclosure of the formula of O'Lenick in which c is "from 1 to 20". (Col. 4, line 12). In addition, O'Lenick states that "[s]ince the sunscreening wavelengths are UV-B the molecules wherein c is 0 are not effective." (Col. 4, lines 29-30). O'Lenick considers $c=0$ to lack utility and no disclosure of a genus of $c=0$ compounds is provided.

Furthermore, O'Lenick discloses a single compound that is without the dimethicone copolyol group, i.e., in which c is zero. This compound is Example 56, the so-called "Comparison Compound". See Col. 9, the third Table which has a heading labeled "Comparison Compound". Subsequent to the Table, O'Lenick states, "It is most interesting and significant that the compound of example 56 has no dimethicone copolyol groups present in the molecule, but has the eugenol based UV absorber. The absorption is at 280 nm, which is the UV-C spectrum. This wavelength is too low to be of interest in sun protection... The result is that the compound covered by example 56 is not a sunscreen." (Col. 9, lines 38-46).

As to O'Lenick's Example 56, the only disclosure of a compound in which $c=0$, the Examiner has failed to identify how the Example meets each and

every element of amended claim 1. Moreover, Applicants submit that the Examiner can not show this because each and every element of the amended claim 1 is not found in O'Lenick's disclosure. Compound 56 lacks not only the c subunit, but also the d subunit. Thus, Compound 56 lacks a lipophilic group. The current claims, on the other hand, comprise elements that have R^2 , a hydrogen or lipophilic group. It is submitted that each and every element of amended claim 1 is not met by O'Lenick's Compound 56 or by O'Lenick's disclosure overall.

Furthermore, Compound 56 of O'Lenick as defined in the third Table of Column 9 is an impossibility by O'Lenick's own formulae (although where $c=0$) as reproduced above. O'Lenick defines Compound 56 by its $c=0$ parameter, as noted above. A look at O'Lenick's formulae reveals that O'Lenick incorporates groups in which their numbers are defined by x, y and z *only* through their attachment to the c subunit. O'Lenick indicates that Compound 56, however, contains 8 units of the x group. This is impermissible by O'Lenick's own definition. And if x groups are present, O'Lenick fails to indicate how they are attached to the molecule. Furthermore, if they are present, then perhaps they are present in such manner that they are polar groups. If Compound 56 was meant by O'Lenick to refer to a different structural formulae than is provided therein (since, as noted, the formulae pertains to $c=1$ to 20 rather than $c=0$), then O'Lenick has failed to include same in his disclosure.

In any event, O'Lenick's Compound 56 species clearly lacks enablement. For a section 102 rejection, a reference must be enabling to place

the allegedly disclosed subject matter in the possession of the public. See *Akzo N.V. v. United States Int'l Trade Comm'n*, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986), *cert. denied*, 482 U.S. 909 (1987).

The fact that Claim 56 is structurally impermissible according to the formulae of O'Lenick further supports that the hypothetical (nonexistent) genus of $c=o$ is also not disclosed or enabled.

For these additional reasons, O'Lenick cannot be used as a basis for a section 102 rejection in connection with any mention of $c=o$.

It is respectfully submitted that the rejection has been rendered moot as to amended claim 1. Reconsideration and withdrawal of the rejection are requested.

It is also respectfully requested that the 35 USC §102(b) rejection be withdrawn with respect to claims 2-5. It is initially noted that claim 3 has been canceled, and hence the rejection with respect to claim 3 has been rendered moot and should be withdrawn. Claims 2, 4 and 5 depend from claim 1. Because amended claim 1 is not anticipated by O'Lenick for the reasons set forth above, it is respectfully submitted that dependent claims 2, 4 and 5 are also not anticipated, and the rejection should be withdrawn.

Rejection Under 35 USC § 103:

Claim 6 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over O'Lenick in view of Gonzenbach et al., US Patent Number 6,123,929 ("Gonzenbach"). (Paper number 20070508, at 3).

In making the rejection, the Examiner referred to the statements made about O'Lenick in the rejection under 35 USC § 102(b) pertaining to claims 1-5 which is summarized here in response to the rejection above. In brief, the Examiner stated that O'Lenick discloses "polysiloxanes [that] can be co-polymerized with UV absorbing, lipophilic and hydrophilic groups ..." (*Id. at 2*).

Pertaining to claim 6, however, the Examiner acknowledged that "O'Lenick does not teach two different UV absorbing species in the same molecule" (*Id. at 3*).

To close the gap, the Examiner relied on Gonzenbach as teaching that "two different UV absorbing species can be bonded to a molecule of polymer using the same hydrosilation chemistry (col. 8, Example 2)." (*Id.*). The Examiner asserted that "O'Lenick and Gonzenbach are analogous art since they both are from the field of ... polymeric sunscreen agents." (*Id.*). The Examiner concluded that "[o]ne of ordinary skill in the art ... would have been motivated to incorporate different UV absorbing species into the polymer to achieve optimal [wavelength] ranges." (*Id. at 3-4*).

With a view towards furthering prosecution, claim 1 has been amended, as discussed above, such that elements having R^3 , a group which is able to form ionogenic or hydrogen bonds, are deleted from the claim.

It is well settled that the Examiner bears the burden to set forth a *prima facie* case of unpatentability. *In re Glaug*, 62 USPQ2d 1151, 1152 (Fed. Cir. 2002); *In re Oetiker*, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); and *In re Piasecki*, 223 USPQ 785, 788 (Fed. Cir. 1984). If the PTO fails to meet its

burden, then the applicant is entitled to a patent. *In re Glaug*, 62 USPQ2d at 1152.

When patentability turns on the question of obviousness, as here, the search for and analysis of the prior art by the PTO should include evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to do what the Applicants have done. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (April 30, 2007) (the obviousness “**analysis should be made explicit**” and the teaching-suggestion-motivation test is “**a helpful insight**” for determining obviousness) (emphasis added); *McGinley v. Franklin Sports*, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). Moreover, the factual inquiry whether to modify documents must be thorough and searching. And, as is well settled, the teaching, motivation, or suggestion to combine “**must be based on objective evidence of record**.” *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (emphasis added). See also Examination Guidelines for Determining Obviousness, 72 Fed. Reg. 57526, 57528 (October 10, 2007) (“the U.S. Patent and Trademark Office Examination Guidelines”) (“The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.”).

The rejection is devoid of a proper §103 analysis. All that is there is the conclusory statement that “[o]ne of ordinary skill in the art ... would have been motivated to incorporate different UV absorbing species into the polymer to achieve optimal [wavelength] ranges.” (Paper No. 20070508 at 3-4).

What the rejection should have done, but did not, was to explain on the record **why** one skilled in this art would modify the disclosure of O'Lenick with Gonzenbach to arrive at the claimed polysiloxane of claim 6. As is well settled, an Examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done. *Takeda Chem. Indus., Ltd v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1357 (Fed. Cir. June 28, 2007) (indicating that "it remains necessary to identify **some reason** that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed compound") (emphasis added); *Ex parte Levengood*, 28 USPQ2d 1300, 1301-02 (BPAI 1993). But this is precisely what the Examiner has done here. Thus, the rejection is legally deficient and should be withdrawn for this reason alone.

Notwithstanding the legally insufficient nature of the rejection, we note that the rejection is also factually insufficient to support a rejection under § 103(a). In doing so we observe that obviousness cannot be based upon speculation, nor can obviousness be based upon possibilities or probabilities. Obviousness **must** be based upon facts, "cold hard facts." *In re Freed*, 165 USPQ 570, 571-72 (CCPA 1970). When a conclusion of obviousness is not based upon facts, it cannot stand. *Ex parte Saceman*, 27 USPQ2d 1472, 1474 (BPAI 1993). Further, "to establish *prima facie* obviousness of a claimed invention, **all claim limitations must be taught or suggested by the prior art.**"

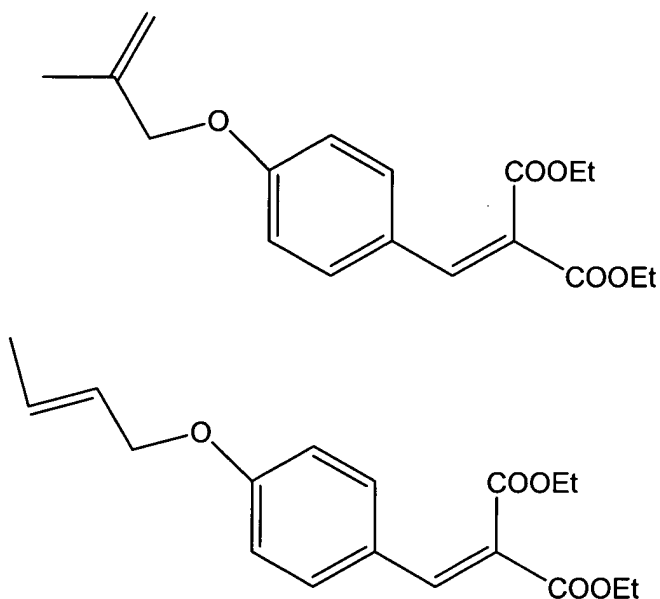
MPEP § 2143.03 (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)) (emphasis added).

First, as indicated above in response to the rejection under 35 USC § 102 based on O'Lenick, there are factual gaps in the Examiner's assertions regarding O'Lenick. Applicants hereby incorporate the arguments made above in response to the 35 USC § 102 rejection concerning O'Lenick. A brief summary is set forth here which is not intended to replace the arguments incorporated from above. First, each and every element of the present claim is not met concerning O'Lenick's subunit b. Second, O'Lenick's disclosed genus requires a hydrophilic moiety, as c is "an integer ranging from 1 to 20" which lacks identity of invention with amended claim 1. In addition, O'Lenick mentions c=0 and considers it to lack utility as sunscreen agents. No disclosure of a genus of c=0 compounds is provided. Furthermore, O'Lenick discloses a species which has c=0 as a "Comparison Compound", Compound 56. Compound 56, however, lacks a lipophilic moiety. And furthermore, O'Lenick defines Compound 56 in an impermissible manner as per O'Lenick's formulae, and this supports the fact that O'Lenick's c=0 hypothetical (nonexistent) formula is also not a proper basis for rejection. The Examiner's reference to O'Lenick as "a polymer whereby there are no units containing a hydrophilic group, i.e. c=0" pertaining to now deleted claim 3 fails to establish how O'Lenick could serve as a primary reference regarding claim 6 which depends from claim 1, as amended. For this reason alone, it is respectfully submitted that O'Lenick is not a properly cited primary reference and the obviousness rejection should be withdrawn.

Additionally, it is respectfully submitted that the Examiner erred in his interpretation of the Gonzenbach reference. Gonzenbach teaches polysiloxanes having only one UV absorbing species in a given molecule. The one UV absorbing species is attached through two different linkers to the polysiloxane, however. Gonzenbach refers to the silylation reaction at, for example, Col. 4, line 63 to Col. 5, line 67. A reaction scheme is shown at Col. 5, lines 1- 49 which has a starting material that is a UV filtering compound with a propynyloxy at the terminal end thereof. The addition reaction proceeds with a lack of selectivity, yielding two compounds having the same UV filtering agent, although attached to the siloxane via a different linker. These different linkers of Gonzenbach are accounted for in the claims of the present invention, for example, within groups IIIc and IIId of claim 1. Group IIIc is $\text{-O-Si(CH}_3\text{)[C(=CH}_2\text{)R}^1\text{]-}$ and what is designated for ease of reference as the linker is $\text{-C(=CH}_2\text{)-}$. Group IIId is $\text{-O-Si(CH}_3\text{)(CH=CH)R}^1\text{]-}$ and what is designated for ease of reference as the linker is -CH=CH- . As the only different portions relate to the linkers, the same UV filter is used and it is bound to the two different linkers in Gonzenbach.

The example that the Examiner referred to in the rejection, Example 2, bears out that one skilled in the art would understand Gonzenbach as disclosing a polymer in which the same UV light absorbing group is present. Gonzenbach Example 2 discloses "the preparation of an organosiloxane compound of the general formula Ia wherein ... X is A which is a benzalmalonate residue of the formula IIa and IIb..." (Col. 7, lines 64-67). A polymer of the

“average structure A-[(CH₃)₂SiO]₂₀-A” was reportedly produced, “wherein A is a residue of the formula IIa₁ and [I]Ib₁.” (Col. 8, lines 16-19). Gonzenbach provides the structures of formulas IIa₁ and IIb₁ as follows:



(Col. 8, lines 20-36). Gonzenbach's structures of formula IIa₁ and IIb₁ are similar to formulas IIIc, i.e., (O-Si(CH₃)[C(=CH₂)R¹]-), and IIId, i.e., (-O-Si(CH₃)(CH=CH-R¹)-), of the present claims in that they both include the linkers -C(=CH₂)- and -CH=CH-, respectively. Formulas IIa₁ and IIb₁ result from the lack of selectivity of the hydrosilylation reaction. Tellingly, Gonzenbach's Example 2 uses **only one starting material** that comprises one UV absorbing species, i.e., [4-(2-propynyloxy)phenyl]methylene)-diethyl ester, for the hydrosilylation reaction. (Column 8, lines 5-15). Therefore, in fact, Gonzenbach discloses

polysiloxanes carrying only **one UV absorbing species** (which corresponds to one single R¹ of the present invention) in the same molecule.

It is respectfully submitted that Gonzenbach should be removed as a basis for rejection. Gonzenbach does not disclose what that Examiner alleges in connection with claim 6, i.e., "that two different UV absorbing species can be bonded to a molecule of polymer using the same hydrosilation chemistry". Thus, the rejection fails as a matter of law.

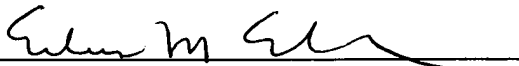
In sum, the Examiner misinterpreted Gonzenbach as disclosing the addition of **two** different UV absorbing species, but in fact, Gonzenbach discloses only **one** such species attached to two different linkers to the polysiloxane. Even if one assumes that O'Lenick is a properly cited primary reference, which it does not, the Examiner's secondary reference, Gonzenbach, does not fill the gaps left by O'Lenick. Therefore, for this additional reason, the rejection should be withdrawn.

The proposed combination of O'Lenick and Gonzenbach fails to teach, suggest or provide motivation for a polysiloxane in which at least two different types of UV absorbing groups are present, as recited in claim 6. In view of the foregoing, it is respectfully submitted that the rejection has been rendered moot. Thus, withdrawal of the rejection is respectfully requested.

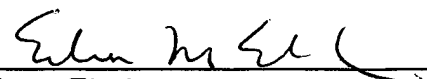
Accordingly, for the reasons set forth above, entry of the amendments, withdrawal of the rejections, and allowance of the claims are respectfully requested. If the Examiner has any questions regarding this paper, please contact the undersigned.

Application No.: 10/521,629
Amendment Dated: January 22, 2008
Reply to Office Action Dated: August 22, 2007

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on January 22, 2008.


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